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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/014,310 | 12/11/2001 | Ritesh P. Shah | 32120-CON1 | 4218 |
| 21567 | 7590 | 03/21/2006 | EXAMINER | |
| WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201 | | | ZHENG, LOIS L | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1742 | |
| DATE MAILED: 03/21/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,310

Applicant(s)

SHAH ET AL.

Examiner

Lois Zheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32, 34-36, 38-40, 42, 43, 47, 49-51, 53-55, 57, 58, 61, 68-75, 83 and 84 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32, 34-36, 38-40, 42, 43, 47, 49-51, 53-55, 57, 58, 61, 68-75, 83 and 84 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/5/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

1. Claims 68 and 83-84 are amended in view of the amendment filed 5 January 2006. Therefore, 32,34-36,38-40,42,43,47,49-51,53-55,57,58,61,68-75, and 83-84 are currently under examination.

Status of Previous Rejections

2. The rejection of claims 83-84 under 35 U.S.C. § 112 is withdrawn in view of the amendment filed on 5 January 2006.

3. The rejection of claims 32, 34-36, 38-40, 42-43, 47, 49-51, 53-55, 57-58, 61, 68-75 and 83-84 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6,348,139 B1(US '139) in view of Ohhashi is withdrawn in view of the terminal disclaimer filed 1 December 2003.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 32, 34-36, 38-40, 42-43, 47, 49-51, 53-55, 57-58, 61 and 83-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klose et al. DD 284,905 A5(Klose).

The teachings of Klose are discussed in paragraph 6 of the previous Non-Final Office Action. The rejections of instant claims are maintained for the same reasons as stated in paragraph 6 of the previous Non-Final Office Action.

Regarding claims 83-84, Klose teaches that the high purity tantalum(i.e. 99.7-99.97 % by weight of Ta) is cold formed, rolled and anneal for recrystallization(abstract). The process of Klose is substantially similar to the process used to make the claimed tantalum(i.e. upset forging at room temperature, followed by rolling and annealing for recrystallization). Furthermore, Klose teaches that the resulting tantalum has an average grain size of 8-20microns and {100} crystallographic orientation, which meets the corresponding claim limitations.

Since Klose teaches the same starting tantalum material, substantially similar processing steps, the same resulting crystallographic orientation and the same average grain size, one of ordinary skill in the art would have expected that the tantalum article produced by Klose would also have a texture in which a {100} pole figure has a center peak intensity of 6.97 to 17.16 random as recited in instant claims 83-84.

6. Claims 68-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klose et al. DD 284,905 A5(Klose) in view of Ohhashi et al. US 5,415,829(Ohhashi).

The teachings of Klose in view of Ohhashi are discussed in paragraph 7 of the previous Non-Final Office Action. The rejection grounds are maintained for the same reasons as stated in paragraph 7 of the previous Non-Final Office Action.

Response to Arguments

7. Applicant's arguments filed 5 January 2006 have been fully considered but they are not persuasive.

In the remarks, Applicant argues that Klose's tantalum product does not necessarily has a maximum grain size of 50 microns. Applicant further backups this argument with citations of US Patent Application Publication No. 2003/0052000 A1(Segal).

Segal teaches, in general terms, that materials such as copper, nickel, tantalum suffer from non-uniformity of grain sizes in the form of duplex grain structure. Segal further shows, in Fig. 6, duplex, non-uniform microstructures of high purity tantalum as may be produced by conventional thermo-mechanical processing techniques. However, Segal does not explicitly teach the specific "conventional thermo-mechanical processing techniques" or specific process that produces duplex, non-uniform microstructures in high purity tantalum.

As discussed in paragraph 5 above, Klose teaches the same starting tantalum material, substantially similar processing steps, the same resulting crystallographic orientation and the same average grain size. Klose does not teach that its tantalum product has duplex non-uniform microstructure. Therefore, one of ordinary skill in the art would have expected that the tantalum product processed by the process of Klose would have substantially similar properties, if not the same properties, as that of the instantly claimed tantalum article, which includes maximum grain size of 50 microns.

Since there is no convincing linkage between the tantalum product produced by Klose and the duplex, non-uniform microstructure in tantalum as taught by Segal, the examiner asserts that Segal does not provide sufficient evidence to shown that the tantalum product of Klose has a maximum grain size of greater than 50 microns.

In addition, once a reference teaching product appearing to be substantially identical is made the basis of a rejection, and the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)), see MPEP 2112. In re Schreiber, 128 F.3d 1473, 1478, 44 USPQ2d 1429, 1432 (Fed.Cir.1997). Applicant has not clearly shown an unobvious difference between the instant invention and the prior art's product.

Applicant also argues that there is no advantage in the context of the Klose Spinnerets, therefore, Klose cannot be considered to teaching the claimed composition.

The examiner does not find applicant's argument persuasive since the instant claims are product claims. The intended use of the tantalum product does not lend patentability to the instant claims. Therefore, whether or not the tantalum product of

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Klose is used as a spinnerets or a sputtering target is irrelevant. In addition, in view of Ohhashi, one of ordinary skill in the art would have realized that the tantalum product as taught by Klose in view of Ohhashi can be used as a sputtering target as claimed.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Klose et al. DD 268,004 teach a high purity tantalum with average grain size of 8-20 microns and {100} crystallographic orientation. This prior teaching is substantially similar as the teachings of Klose et al. DD 284,905.

Friedman, "Grain Size Refinement in a Tantalum Ingot", Metallurgical Transactions, Vol. 2 No. 1, January 1971, pages 337-341. Friedman teaches a process (i.e. upset forging, followed by extrusion, followed by annealing) to produce a high purity tantalum product with maximum grain size of less than 50%.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LLZ

ROY KING
SUPERVISORY PATENT EXAMINER
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